

Claims

I claim:

1. A support member adapted to join two parallel sides of a frame, each of the sides having at least one receptacles, said support member comprising a substantially straight member having ends adapted to be snapped into said the receptacles to join the ends of the support member with the parallel sides of a frame.
2. A support member as defined in Claim 1 wherein said straight member is a tubular metal member.
3. A support member as defined in claim 1 wherein said support member includes a molded plastic housing having a leg extending a length downwardly therefrom.
4. A support member as defined in claim 3 wherein said length of said leg is extending from said housing is adjustable.
5. A support member as defined in Claim 1 wherein said straight member includes at least one telescoping bracket extending outward from at least one of said ends of said straight member to affix said straight member to at least one of the receptacles of the frame.
6. A support member as defined in Claim 5 wherein said at least one telescoping bracket includes a bracket inwardly sloping in the downward direction.
7. A bed frame or bed rails for underlying and supporting a box spring, said bed frame comprising a pair of side rails spaced apart and parallel to each other, at least one receptacle located on each of said pair of side rails, a cross member affixed to each of

said side rails and extending transversely therebetween, said cross member comprising a straight member having opposed ends, end brackets slidably received in said opposed ends of said straight member, said end brackets configured to be snap fitted within said receptacles.

8. A bed frame or bed rails for underlying and supporting a box spring as defined in claim 7 wherein said straight member includes a releasable securing means to secure said end brackets to said straight member to fix said end brackets in a desired position at a desired length of said cross member.

9. A bed frame or bed rails for underlying and supporting a box spring as defined in claim 7 wherein said side rails each have a receptacle bracket adapted to receive and interfit with said end brackets to affix said cross member to said side rails.

10. A bed frame or bed rails for underlying and supporting a box spring as defined in claim 9 wherein said end brackets comprise male portions tapered inwardly in the downward direction and said receptacle brackets on said side rails are female portions having an inwardly tapered opening to mate with said male portions.

11. A bed frame or bed rails for underlying and supporting a box spring as defined in claim 9 wherein said end brackets have flattened, flared ends adapted to be affixed to said side rails.

12. A bed frame or bed rails for underlying and supporting a box spring as defined in claim 14 wherein said side rails include rail brackets having openings configured to receive the end brackets of said straight member.

13. A cross member for use with a bed frame or bed rails, said cross member comprising a straight member comprising a steel member having a symmetrical cross section and having a center and two opposing ends, a molded plastic housing contacting

said straight member at about said center of said straight member, wherein said molded plastic housing includes a leg extending a length from said molded plastic housing.

14. A cross member for use with a bed frame or bed rails as defined in claim 13 wherein the length of said leg extending from said plastic housing is adjustable.

15. A cross member for use with a bed frame or bed rails as defined in claim 14 wherein said leg is adjustable by a locking mechanism manually operable by a user.

16. A cross member for use with a bed frame or bed rails as defined in claim 15 wherein said manual operation of said locking mechanism allows said leg to be readily from a locked position to drop downwardly by gravity.

17. A cross member for use with a bed frame or bed rails as defined in claim 13 wherein said two opposing ends of said straight member include slides adapted to be slidably affixed to said opposing ends to enable the overall length of said straight member to be adjusted.

18. A cross member for use with a bed frame or bed rails as defined in claim 17 wherein said slides are molded plastic slides.

19. A bed rail construction comprising side rails and at least one cross member having ends, rail connectors affixed to each of said side rails adapted to receive said ends of said at least one cross member, said rail connector having a pair of flexible tabs adapted to capture said ends of said cross member when said ends are received in said rail connector.

20. A bed rail construction as defined in claim 19 wherein said ends of said at least one cross connector comprises lateral side surfaces formed in the configuration of upwardly shaped wedges.

21. A bed rail construction as defined in claim 20 wherein flexible tabs are adapted to flex as said upwardly shaped wedges are received in said rail connectors and said flexible tabs have inwardly extending lips adapted to capture said upwardly shaped wedges when said ends of said at least one cross member are received in said rail connectors.

22. A bed rail construction as defined in claim 21 wherein said side rails have a horizontal surface having an opening therein and wherein said rail connector includes a similar shaped opening and further includes a flexible plug adapted to be inserted through said opening in said side rail connector and said opening in said side rail, said ends of said at least one cross member having downwardly facing tabs that interfit into said plug when said ends of said at least one cross member is received in said rail connectors.

23. A bed rail construction as defined in claim 22 wherein said plug has a barb adapted to retain said plug to said side rail when said downwardly facing tabs of said ends of said at least one cross member are inter-fitted into said plug.

24. A system for connecting a cross member of a bed assembly to a side rail, said cross member having a molded end housing, a rail connector affixed to said side rail and having a receptive fitting to receive said molded end housing, said molded end housing being molded of a shape to be manually snapped onto said rail connector to be firmly affixed thereto by the use of a users hands only.

25. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 24 wherein said molded end housing includes upwardly directed wedge shaped ends adapted to fit into said rail connector.

26. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 24 wherein said rail connector includes flexible tabs that interfit with

said upwardly directed wedge shaped ends to retain said cross member affixed to said side rail.

27. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 26 wherein said side rail has an opening and said rail connector has an opening adapted to be aligned with said opening in said side rail, said system further includes a flexible plug adapted to be inserted through both said opening in said rail connector and said opening in said side rail, and wherein said molded end housing has a downwardly facing tab adapted to enter said flexible plug to retain said plug in said position inserted through both said opening said rail connector and said opening in said side rail.

28. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 27 wherein said plug further comprises a lip extending outwardly therefrom and adapted to lock with said opening in said side rail to affix said plug in position inserted through both said opening said rail connector and said opening in said side rail.

29. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 44 wherein said rail connector is affixed to said side rail by means of metal clips.

30. A system for connecting a cross member of a bed assembly to a side rail as defined in claim 44 wherein said side rail is a wooden side rail and said rail connector is affixed to said side rail by means of screws.

31. A system for affixing a leg to a cross member of a bed assembly, said system comprising a housing affixed to said cross member, said housing having a leg slidably affixed thereto, a locking means normally locking said leg in a locked position

with respect to said housing, said locking mechanism having a latch adapted to be operated by a user to release said leg from its locked position to an unlocked position.

32. A self locking system for affixing a leg to a cross member of a bed assembly as defined in claim 31 wherein said latch is spring biased to retain said leg in said locked position.

33. A self locking system for affixing a leg to a cross member of a bed assembly as defined in claim 32 wherein said leg is adapted to slide downwardly from said housing when said leg is in said unlocked position.

34. A self locking system for affixing a leg to a cross member of a bed assembly as defined in claim 33 wherein said system includes a plurality of legs having different lengths.

35. A leg assembly for providing support to a structure, said leg assembly comprising a housing having a bracket adapted to be affixed to the structure, said housing having a leg slidably affixed thereto, a locking means normally locking said leg in a locked position with respect to said housing, said locking mechanism having a latch adapted to be operated by a user to release said leg from its locked position to an unlocked position.

36. A leg assembly for providing support to a structure as defined in claim 35 wherein said latch is spring biased to retain said leg in said locked position.

37. A leg assembly for providing support to a structure as defined in claim 36 wherein said leg is adapted to slide downwardly from said housing when said leg is in said unlocked position.

38. A leg assembly for providing support to a structure as defined in claim 37 wherein said structure is a wooden bed slat and said bracket is adapted to be affixed to said wooden slat by means of screws.

39. A leg assembly for providing support to a structure as defined in claim 37 wherein said structure is a metal bed cross member.

40. A system for connecting a cross member of a bed assembly to a side rail, said cross member having outer ends, a rail connector affixed to said side rail and having a receptive fitting to receive said outer end of said cross member, said outer end being configured to be manually snapped into said rail connector to be firmly affixed thereto.

41. A system as defined in claim 40 wherein said outer ends of said cross member comprise molded ends.

42. The system as defined in claim 40 wherein said side rail is a wooden side rail and said rail connector is affixed to said side rail by means of a stamped metal support bracket that is affixed to said side rail.

43. The system as defined in claim 42 wherein said stamped metal support bracket has a plurality of screw holes and is affixed to said wooden side rail by wood screws passing through said screw holes.

44. The system as defined in claim 42 wherein said stamped metal support bracket is an elongated support adapted to have a plurality of rail connector mounted along the linear length of said side rail.

45. The system as defined in claim 40 wherein said side rail is a wooden side rail and said rail connector is affixed to said side rail by means of an angle iron bracket having a vertical leg and a horizontal leg.

46. The system as defined in claim 43 wherein said vertical leg of said angle iron bracket is affixed to said side rail and said rail connector is affixed to said horizontal leg of said angle iron.

47. The system as defined in claim 46 wherein said side rail is a wooden side rail and said vertical leg has a plurality of screw holes and said angle iron bracket is affixed to said wooden side rail by wood screws passing through said screw holes.

48. The system as defined in claim 46 wherein said angle iron bracket is an elongated angle iron bracket adapted to have a plurality of rail connectors mounted along the linear length of said side rail.

49. The system as defined in claim 40 wherein said side rail is a wooden side rail and said rail connector is affixed to said side rail by means of an extruded metal bracket that is affixed to said side rail.

50. The system of claim 49 wherein said extruded metal bracket has a vertical body having a plurality of screw holes and a horizontal ledge extending therefrom and wherein said extruded metal bracket is affixed to said wooden side rail by wood screws passing through said screw holes and said rail connector is affixed to said horizontal ledge of said extruded metal bracket.

51. The system as defined in claim 50 wherein said extruded metal bracket is an elongated extruded metal bracket adapted to have a plurality of rail connectors mounted along the linear length of said elongated extruded metal bracket.

52. A system for connecting a cross member of a bed assembly to a side rail, said cross member having an outer end, a folded metal bracket affixed to said side rail, said folded metal bracket having a receptive fitting to receive said outer end, said outer end being

configured to be manually snapped into said folded metal bracket to be firmly affixed thereto.

53. The system of claim 52 wherein said receptive fitting comprises a bottom surface and a pair of side flanges, each of said side flanges having an inwardly and downwardly directed tab, said tabs adapted to overlie and snap fit against said outer end when said outer end is affixed to said folded metal bracket.

54. The system of claim 53 wherein said side rail is a wooden side rail and said folded metal bracket has a vertical body having a plurality of screw holes and wherein said folded metal bracket is affixed to said side rail by means of screws passing through said screw holes.

55. The system as defined in claim 54 wherein said folded metal bracket is an elongated folded metal bracket adapted to have a receptive fittings formed along the linear length of said elongated folded metal bracket.

56. A wooden side rail for use in assembling a bed frame, said wooden side rail having an interior surface facing the interior of the bed frame when assembled, said wooden side rail having an elongated support bracket affixed to the interior surface constructed of a material selected from the group consisting of metal, plastic, composites and combinations thereof to resist the downward bowing of the side rail under load.

57. A wooden side rail as defined in claim 56 wherein said support bracket further has a lower flange adapt to underlie the bottom surface of said wooden side rail.

58. A wooden side rail as defined in claim 56 wherein said support bracket has a plurality of screw holes and is affixed to said interior surface by means of screws.